

Abstract of the Disclosure

A tank agitator connects to a low head feed and causes agitation by discharging through a port that might rotate, oscillate, or otherwise issue a pulsing stream. This agitator has a housing with a turbine plenum and an exhaust plenum. A turbine in the turbine
5 plenum spins by the flowthrough of the feedwater and exhausts to the exhaust plenum. A hollow drive shaft is spun by the turbine and extends through the exhaust plenum and to terminate outside the housing. It has an aperture that allows water in the exhaust plenum to flow into its lumen. A nozzle caps the shaft and is bent such that the discharge issuing therefrom sweeps in circles with the spinning of the drive shaft. A variant form of the
10 agitator includes a drive train that incorporates a drag link to convert the spinning input of the turbine into an oscillating output in the drive shaft. In another variant form, the discharge is pulsed. To do this, the exhaust plenum lies between an opening to the turbine plenum and a port in the housing wall to the outside. A blocker door is coupled to and driven by the spinning turbine to cycle between uncovering and covering one of the exhaust
15 opening and the discharge port. Given the foregoing, the discharge stream issuing from the discharge port will pulse between alternating phases of flow and quiescence.